

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau(43) International Publication Date  
6 May 2004 (06.05.2004)

PCT

(10) International Publication Number  
WO 2004/038650 A1(51) International Patent Classification<sup>7</sup>: G06K 09/18(21) International Application Number:  
PCT/AU2003/001343

(22) International Filing Date: 10 October 2003 (10.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2002952259 25 October 2002 (25.10.2002) AU  
10/409,864 4 September 2003 (04.09.2003) US(71) Applicant (for all designated States except US): SILVER-  
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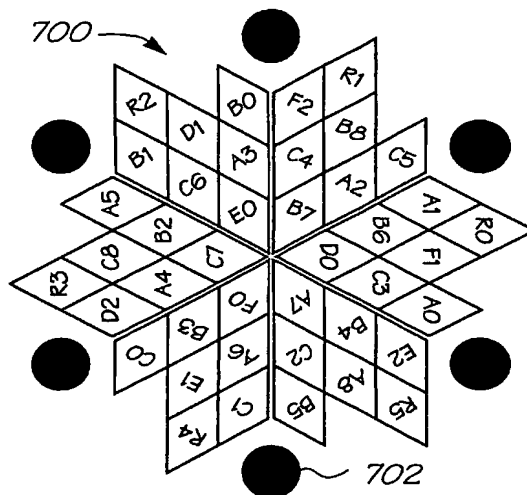
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(AU).(81) Designated States (national): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,  
CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE,  
GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,  
KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,  
MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT,  
RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,  
TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.(84) Designated States (regional): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,  
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,  
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: ORIENTATION-INDICATING CYCLIC POSITION CODES

(57) Abstract: Machine-readable coded data disposed on or in a substrate in accordance with a layout, the layout having at least order  $n$  rotational symmetry, where  $n$  is at least two, the layout encoding an orientation codeword comprising a sequence of an integer multiple  $m$  of  $n$  symbols, where  $m$  is one or more, each encoded symbol being distributed at  $n$  locations about a center of rotational symmetry of the layout such that decoding the symbols at each of the  $n$  orientations of the layout produces  $n$  representations of the orientation codeword, each representation comprising a different cyclic shift of the orientation codeword and being indicative of the degree of rotation of the layout, and wherein the orientation codeword is fault tolerant.